

CLAIMS

What is claimed is:

1. A nonaqueous metal container coating composition

comprising:

- I) at least one coating composition component selected from the group consisting of a binder, a pigment, and a solvent; and
- II) at least one base-catalyzed reaction product comprising the following reactants:

- A) at least one compound of formula I



wherein each X group is a halogen atom or one X group is a halogen atom and two X groups represent an epoxy oxygen atom, which is attached to two adjacent carbon atoms in the R^1 group to form an epoxy group, and R^1 is an alkanetriyl group containing from 3 to 10 carbon atoms; and

- B) at least one compound having the formula II



wherein R^2 is a substituted or unsubstituted, saturated or unsaturated, organic group having from 1 to 36 carbon atoms; X is $-O-$, $-S-$, or $-NR^3-$ where R^3 is hydrogen or a C_1 - C_{18} alkyl group; each AO group is independently an ethyleneoxy, 1,2-propyleneoxy, or 1,2-butyleneoxy group, n is a number from 0 to 200; and Y is hydrogen, or Y can be a mercapto group or an amino group or a C_1 - C_6 alkylamino group in place of a terminal $-OH$ group, provided that when Y is mercapto or an amino group, n is at least 1;

wherein the mole ratio of the linking compound A) to B) is from 0.1:1 to 5:1.

2. A metalworking lubricant composition comprising:

- A) at least one lubricating oil; and
- B) at least one base-catalyzed branched reaction product comprising the following reactants:
 - a) at least one compound of formula I



wherein each X group is a halogen atom or one X group is a halogen atom and two X groups represent an epoxy oxygen atom, which is attached to two adjacent carbon atoms in the R^1 group to form an epoxy group, and R^1 is an alkanetriyl group containing from 3 to 10 carbon atoms; and

- b) at least one compound having the formula II



wherein R^2 is a substituted or unsubstituted, saturated or unsaturated, organic group having from 1 to 36 carbon atoms; X is $-O-$, $-S-$, or $-NR^3-$ where R^3 is hydrocarbon or a C_1 - C_{18} alkyl group; each AO group is independently an ethyleneoxy, 1,2-propyleneoxy, or 1,2-butylenoxy group, n is a number from 0 to 200; and Y is hydrogen, or Y can be a mercapto group or an amino group or a C_1 - C_6 alkylamino group in place of a terminal $-OH$ group, provided that when Y is mercapto or an amino group or a C_1 - C_6 alkylamino group, n is at least 1;

wherein the mole ratio of the linking compound a) to b) is from 0.1:1 to 5:1.

3. An aqueous electroplating composition comprising :
 - A) at least one metal or metalloid; and
 - B) at least one base-catalyzed reaction product comprising the following reactants:
 - a) at least one compound of formula I



wherein each X group is a halogen atom or one X group is a halogen atom and two X groups represent an epoxy oxygen atom, which is attached to two adjacent carbon atoms in the R¹ group to form an epoxy group, and R¹ is an alkanetriyl group containing from 3 to 10 carbon atoms; and

- b) at least one compound having the formula II



wherein R² is a substituted or unsubstituted, saturated or unsaturated, organic group having from 1 to 36 carbon atoms; X is -O-, -S-, or -NR³- where R³ is hydrogen or a C₁-C₁₈ alkyl group; each AO group is independently an ethyleneoxy, 1,2-propyleneoxy, or 1,2-butylenoxy group, n is a number from 0 to 200; and Y is hydrogen, or Y can be a mercapto group or an amino group or a C₁-C₆ alkylamino group in place of a terminal -OH group, provided that when Y is mercapto or an amino group, or a C₁-C₆ alkylamino group, n is at least 1;

wherein the mole ratio of component a) to b) is from 0.1:1 to 5:1.